

OUTSOURCING NETWORK MANAGEMENT

AND OPERATIONS

EUROPE 1992 - 1997

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**Outsourcing Information Systems
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(OEOSP)**

***Outsourcing Network Management and
Operations—Europe, 1992-1997***

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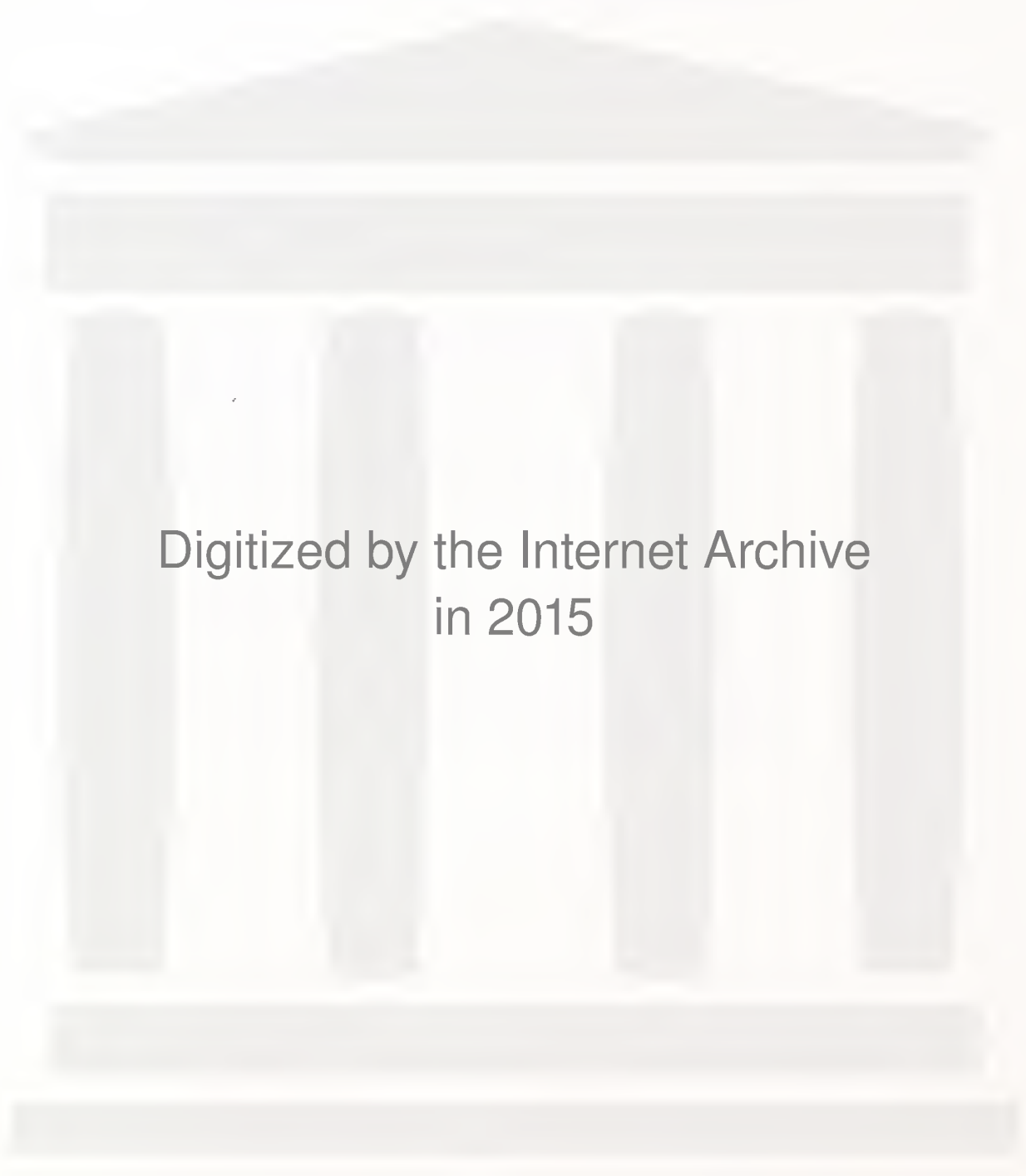
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Abstract

Improved connectivity is becoming a vital issue for users. Users are increasingly seeking to connect all end users and all IS applications to a common corporate network. This introduces considerable complexity into the network management task for technical and geographic diversity. Simultaneously, users are faced with the challenge of reducing the costs of running their corporate networks without reduction in reliability or service levels.

One approach to these issues, currently gaining in popularity, is network management outsourcing. This report analyses the European market for network management outsourcing. In particular, it provides market forecasts, analyses of users' requirements and reasons for adopting network management outsourcing with details of leading vendors' offerings and strategies.



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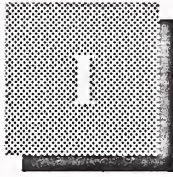
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Introduction

A

Purpose

The scope of the outsourcing market in Europe is expanding rapidly as IS management faces pressures to reduce costs and maintain service levels while providing more widespread connectivity to IS.

One solution to this challenge is network management outsourcing.

This report analyses the European market for network management outsourcing. In particular, it provides:

- Identification of the principal driving forces behind the adoption of network management outsourcing
- An analysis of the criteria vendors must meet to succeed in this market
- Market forecasts by country
- Details of the offerings and strategies of five leading vendors

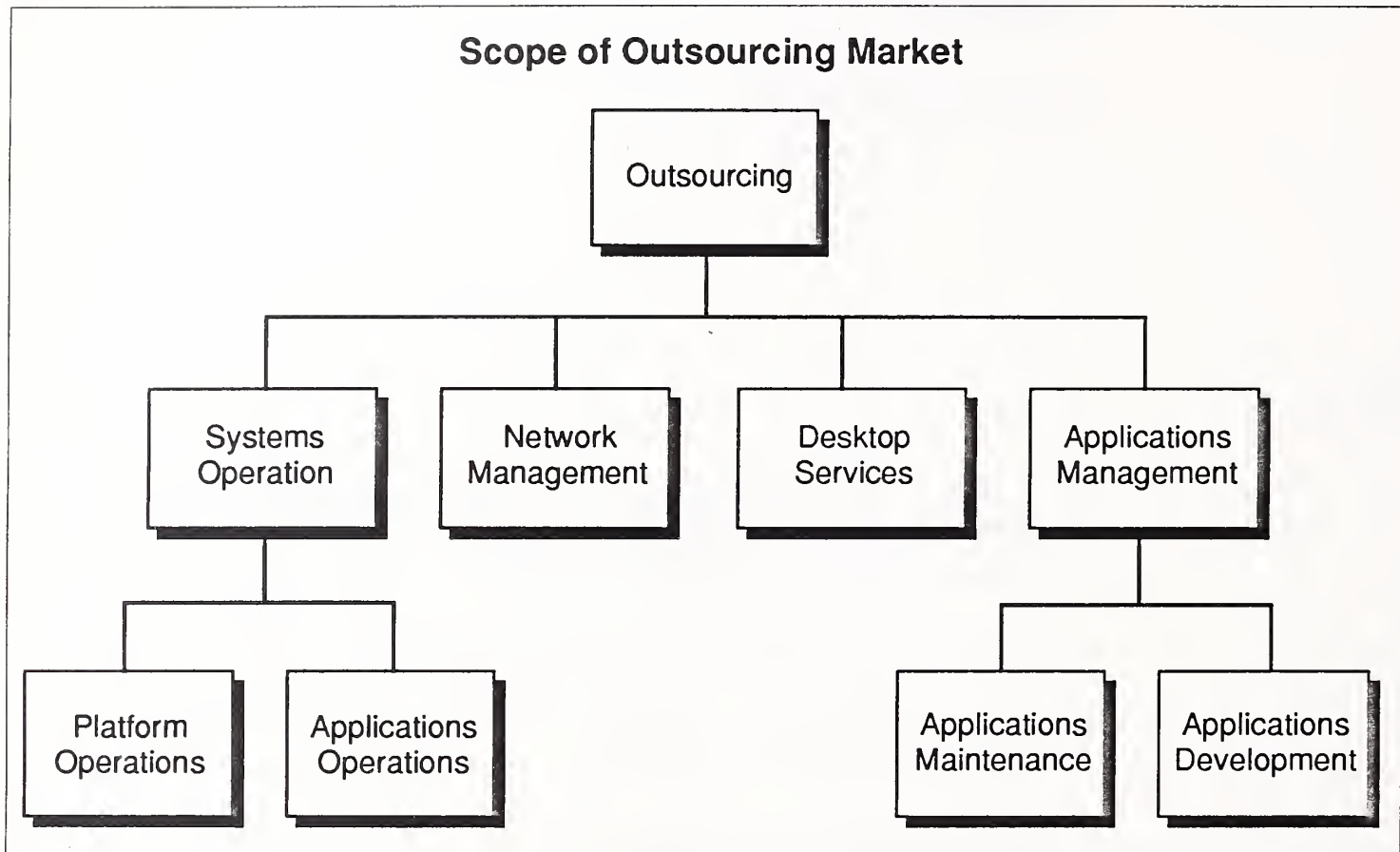
B

Scope and Methodology

This report is based on 15 telephone interviews and five face-to-face interviews with network services managers.

The scope of the outsourcing market is shown in Exhibit I-1.

EXHIBIT I-1



Each of these elements is defined as follows:

- *Outsourcing* - Contracting for all or a major portion of an information system function or process to a vendor on a long-term basis.
- *Systems Operations* - Contracting out, to a vendor, the information systems operations in either of two ways:
 - *Platform Systems Operations* - The vendor is responsible for managing the computer systems and their associated networks.
 - *Applications Systems Operations* - The vendor is responsible for developing and/or maintaining a client's applications software as well as operating and managing the computer systems and their associated networks.

- *Network Management* - Contracting to a vendor for the operations and management of the computer-related telecommunications network, transmitting data, voice, image, text, local-and wide-area networks. Voice-only network operations are not a part of information systems outsourcing.
- *Desktop Services* - Contracting out to a vendor for the deployment, maintenance, support and connectivity of the firm's PC/workstation inventory. The service may also include performing the help desk function.
- *Applications Management* - The vendor is responsible for the development and maintenance of all the applications systems a client uses to support a business operation.
 - *Applications Development* - Contracting out for the design, development, and long-term maintenance and enhancement of new applications software associated with a business operation.
 - *Applications Maintenance* - Contracting out only for the maintenance of the existing applications software associated with a business operation.

This report focuses specifically on the network management component of the outsourcing market. In addition, the value of outsourced network management embedded within the platform operations and applications operations components are also forecast.

C

Report Contents

Chapter II is the Executive Overview that contains a summary of the key findings of the report.

Chapter III contains forecasts for the network management market over the period 1992 to 1997 by country.

Chapter IV analyses users' requirements. In particular, the changes and improvements that users require from their corporate networks are identified, as well as the criteria that need to be met by network management outsourcing vendors.

Chapter V provides profiles of five vendors active in network management outsourcing.

D**Related Reports**

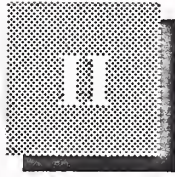
Information Systems Outsourcing Market Opportunities, Europe, 1992-1997

Outsourcing Systems Operations, Europe, 1992-1997

Outsourcing Desktop Services, Europe, 1992-1997

Information Systems Outsourcing Competitive Analysis, Europe, 1992

Outsourcing Applications Management, Europe, 1992-1997



Executive Overview

A

Outsourced Network Management Services Market Forecast to Grow at 22%

The market for outsourced network management services has been inhibited in Europe by the restrictive influence of the continuing PTT monopolies and the difficulties vendors experience in assembling comprehensive pan-European networks.

However, in spite of these difficulties, users are showing increasing enthusiasm for outsourced network management. The overall outsourced network management market is forecast to grow in Europe from \$700 million in 1992 to \$1,900 million by 1997.

This growth is being driven by:

- The developing importance of corporate networks
- Users evaluating outsourcing as a means of cost reduction
- Vendors' ability to offer the comprehensive service required

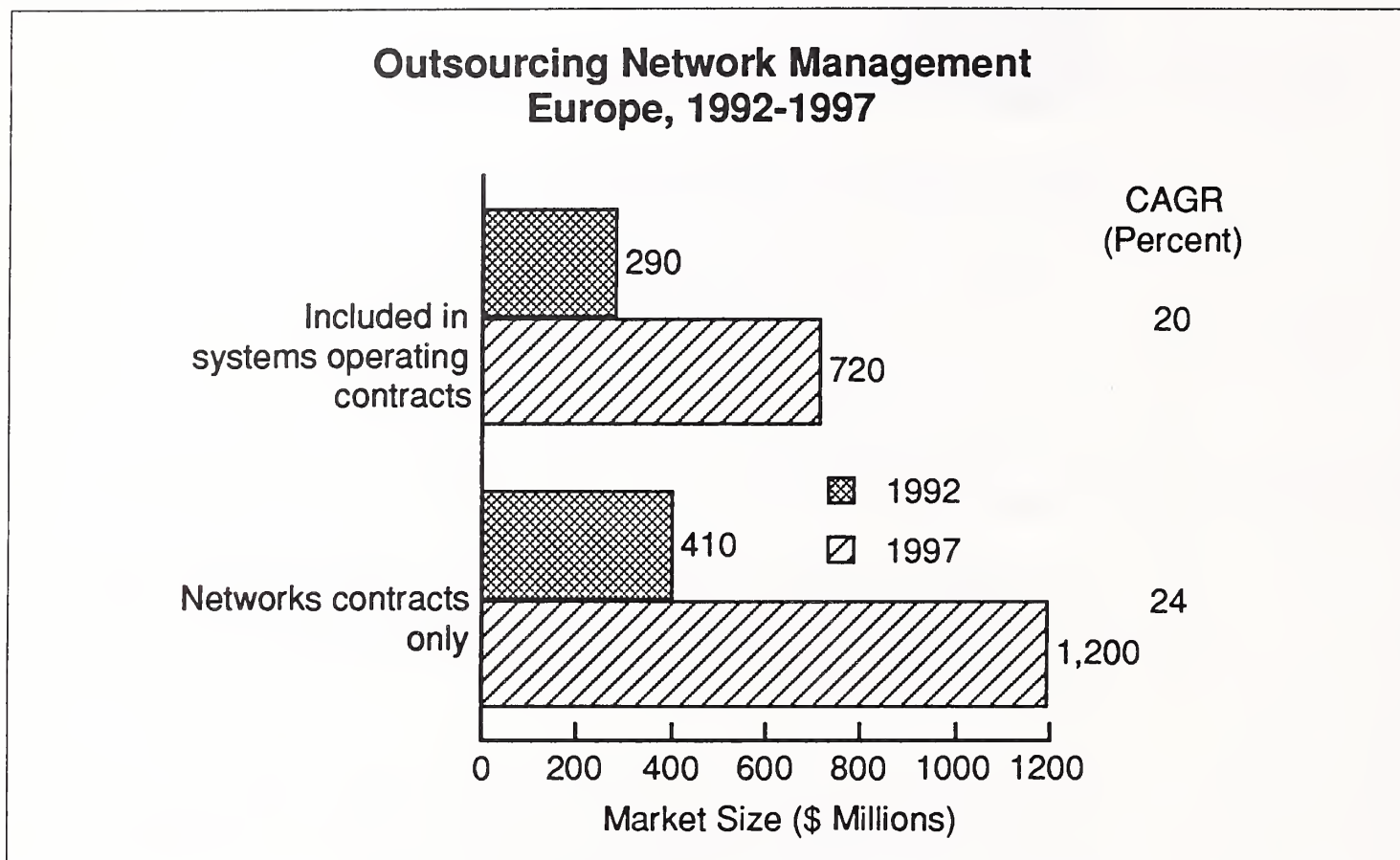
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Strategic Importance of Corporate Networks

Exhibit II-1 illustrates the two major components contributing to the overall market for outsourced network management, namely:

- network management services included as a component of wider outsourcing contracts involving platform operations or applications operations
- Free-standing network management contracts

EXHIBIT II-1

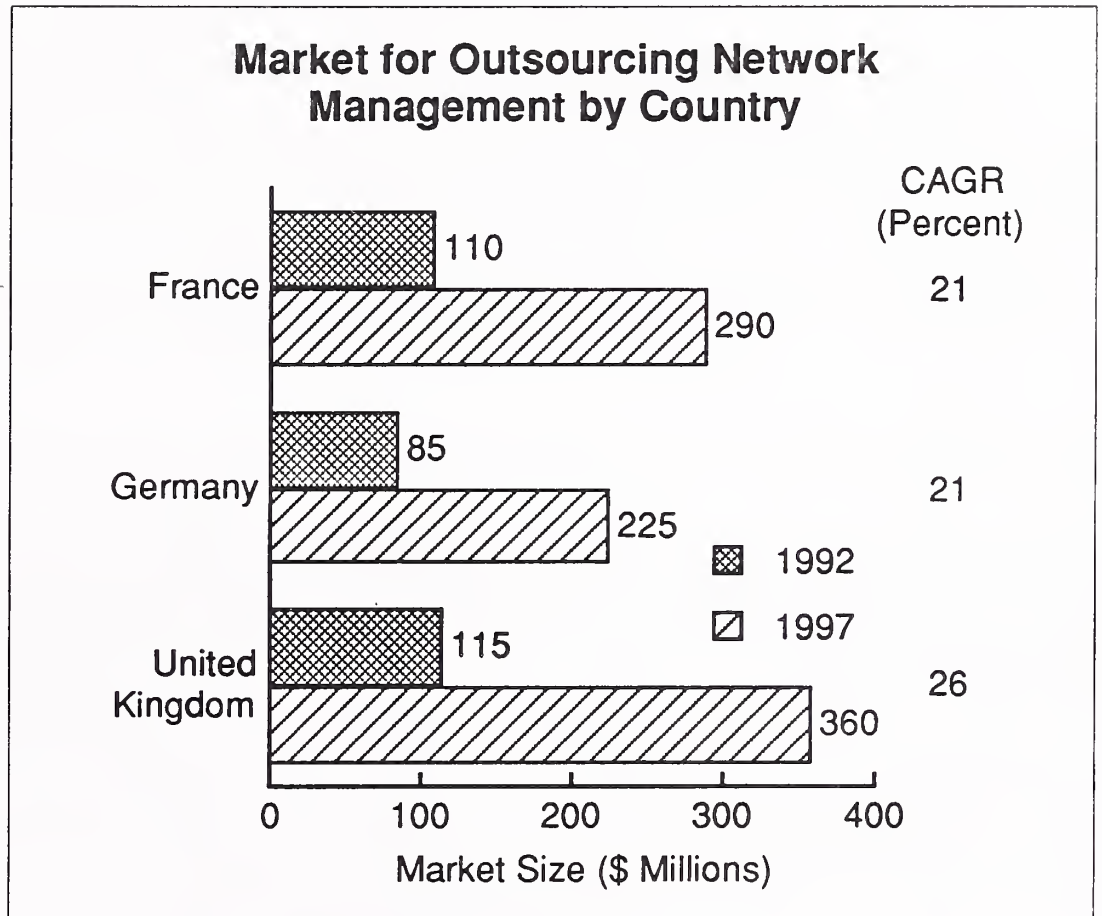


For the remainder of this report, including the market forecasts in Section III, only the market for free-standing network management outsourcing contracts is analysed.

The market for stand-alone network management outsourcing is forecast to grow the more rapidly of the two components. With the move to distributed IS architectures, corporate networks are assuming greater importance to their parent organizations. Users want to outsource the management of their corporate networks more than the management of their data centres or systems development activities.

The growth forecasts for France, Germany, and the United Kingdom are provided in Exhibit II-2.

EXHIBIT II-2



The higher levels of deregulation in the United Kingdom combined with a greater cultural propensity to outsource are expected to produce high levels of growth.

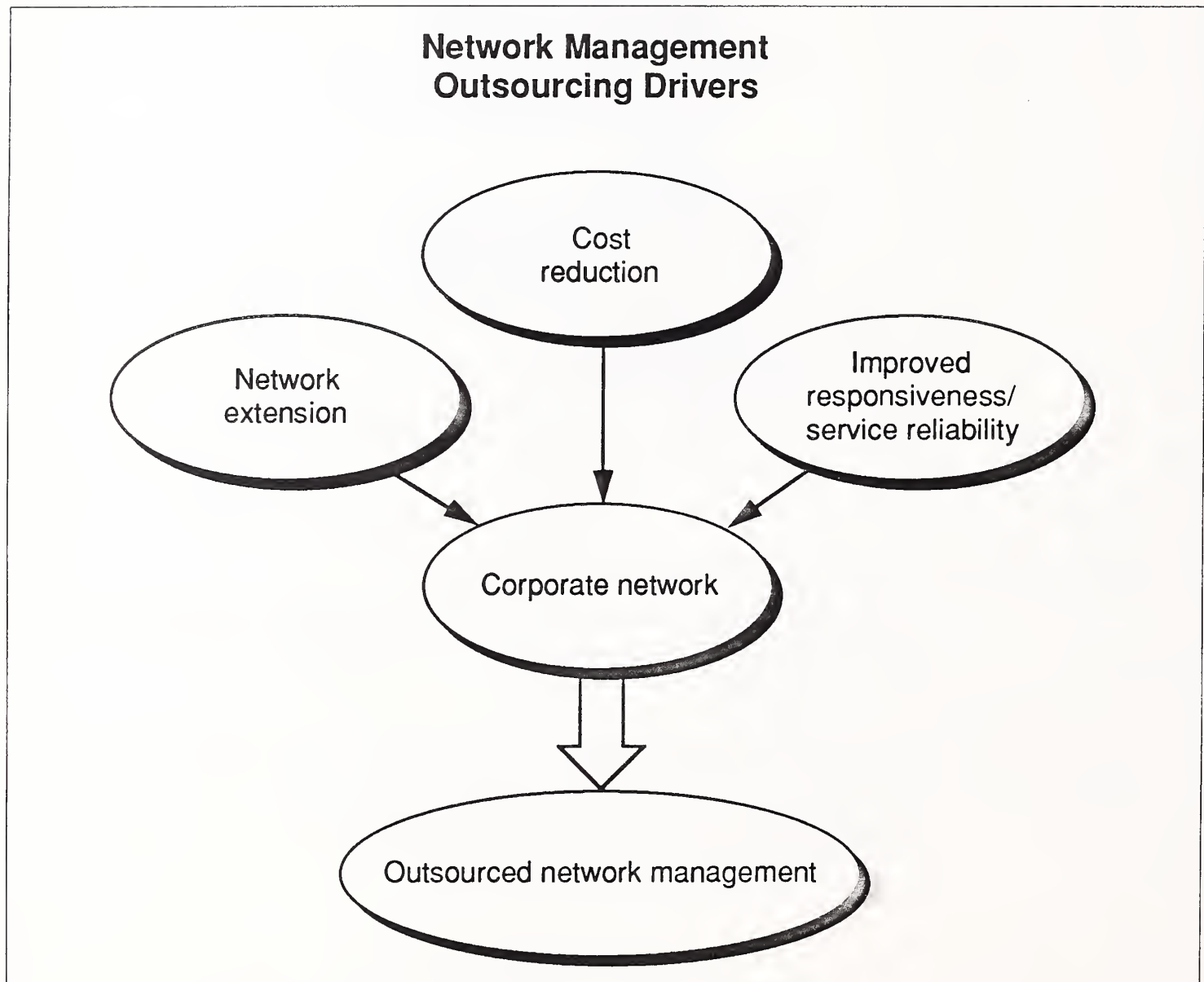
The German market is inhibited by the Deutsche Bundespost's high level of influence. For example, though users wish to outsource voice and data networking by using a common network, Deutsche Bundespost is strongly resisting the deregulation of voice services.

C

Cost Reduction—The Major User Motivation

Exhibit II-3 shows the major driving forces leading to outsourced network management.

EXHIBIT II-3



The desire to reduce costs is the major stimulus for users to consider outsourcing. The need to reduce the costs of running their corporate networks is important by approximately 50% of major European organizations.

Outsourcing is the most probable means of achieving cost reduction. Other ways of reducing the costs of running corporate networks considered by users include:

- Centralized data management
- Bandwidth sharing
- Use of new technologies such as ISDN

Another important driving force is the need to extend the existing network. Users find it challenging to establish and maintain the transnational networks required to support their business operations in the 1990's. This is especially the case when these networks are required to interconnect widely heterogeneous technical architectures.

In other cases, users seek to ensure high levels of service to their clients and remove any elements of network instability.

D

Users Require Comprehensive Service Provision

Exhibit II-4 lists the three principal requirements of organizations considering outsourcing their corporate network management.

EXHIBIT II-4

Key User Requirements	
Requirement	Importance level
Comprehensive coverage	High
Similar service levels at lower cost	High
High reliability	High

To be successful, vendors need to satisfy each of these requirements.

Firstly, vendors have a choice between offering clients:

- Similar service levels at a lower cost than that achieved in-house
- Higher service levels at a similar cost to that achieved in-house

Some users still doubt vendors' ability to satisfy these basic criteria. One user expressed his sentiments as follows: "I am certainly not going to pay more for a lower level of service."

The decision to offer which of these alternatives varies from client to client. However, in the present economic environment, the majority of users match their current service levels while significantly reducing costs. A number of vendors perceive that significant cost reductions will be

difficult to achieve. However, significant cost reductions will need to be achieved to satisfy users. Vendors in the U.S. have demonstrated that this can be consistently delivered in practice.

Users also require vendors to provide comprehensive coverage—geographically and technically. Users will not outsource the simple elements of their corporate network while retaining the difficult-to-manage components in-house. To satisfy this requirement, vendors need to offer a high level of geographic coverage and manage a wide range of technical environments including local-area networks.

Thirdly, outsourcing is always concerned with minimising risk. To meet this requirement, vendors must demonstrate high levels of security and reliability in managing networks. This remains a significant concern for many users.

The major future trends in outsourcing network management are listed in Exhibit II-5.

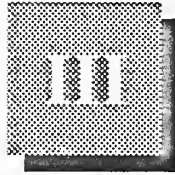
EXHIBIT II-5**Future Trends**

- Greater emphasis on voice/image/video transmission
- LAN management becomes increasingly important
- Internationalization of network management

Firstly, users want to combine their voice and data networks to achieve greater efficiencies. In addition, vendors expect image and video transmission to increase in importance over the next five years. The imaging market is driven by the widespread requirement to transmit CAD data to clients and component suppliers.

Secondly, there will be a major requirement to manage combined LAN/WAN networks. The role of LANs is gaining importance as organizations downsize because a number of companies find that LAN management is the major issue rather than WAN management.

Thirdly, organizations need to operate on a transnational basis. These transnational organizations are adopting common decentralized, networked IS systems. Any potential vendor of outsourced network management needs to offer correspondingly transnational network management.



Network Management Outsourcing Forecasts

A

Network Management Outsourcing Market Value to Reach Over \$1 Billion by 1997

INPUT predicts that the outsourcing market in Europe will achieve growth rates of 22% on average per year up to 1997; double the rate of the systems and software market overall. The generalised economic slowdown in Europe has severely impacted the software and services market as a whole; however, the opposite effect is being experienced for outsourcing services.

INPUT has always predicted that outsourcing will develop in three stages:

- Firstly, by outsourcing IS infrastructure management such as the operation of data centres.
- Secondly, by the combination of management and external vendors in systems development and IS infrastructures.
- Thirdly, by the outsourcing of complete business functions of which IS is merely a part.

Applications operations is forecast to grow more rapidly than platform operations over the next five years as organisations accept the virtues of outsourcing development.

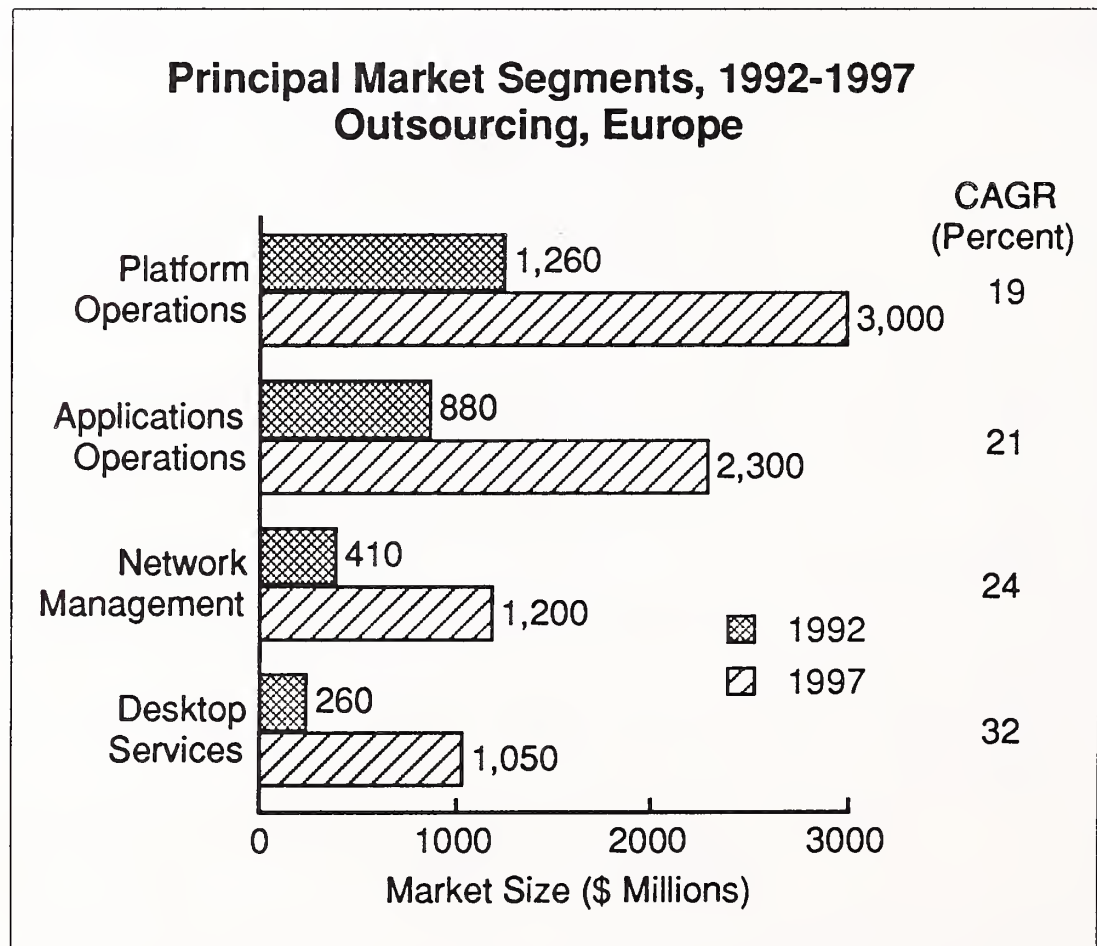
In other instances, the outsourcing of complete business functions (business operations) has also begun. Examples of this include the willingness of many local government authorities in the U.K. to outsource their revenue collection, and BP Exploration's outsourcing of its accounting function to Andersen Consulting.

However, many organisations are still at the stage of outsourcing their IS infrastructure management. Even here there are major changes taking place in the nature of the services outsourced with a decreased emphasis on the outsourcing of mainframe-based data centres and an increased

emphasis on the management of corporate networks and desktop services. As a result, these new forms of IS infrastructure management are forecast to be the fastest growing subsectors of systems operations over the next five years.

It is expected that infrastructure management consisting of platform operations, network management and desktop services will continue to account for approximately 70% of systems operations revenues. However, the importance of platform operations declined from 45% of systems operations in 1992 to 40% by 1997. The remaining gap will be filled by network management and desktop services. Exhibit III-1 illustrates the relative growth rates predicted for the systems operations market subsectors.

EXHIBIT III-1

**B****U.K., The Most Developed Market**

The U.K. is the most developed outsourcing market in Europe, and will continue to develop rapidly due to deep recessionary effects and the cultural stance taken towards outsourcing. Executives in the U.K. have a greater propensity to adopt a core business focus than those in many other regions of Europe.

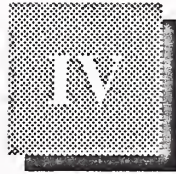
This particularly applies to Germany where many executives are likely to oppose an outsourcing philosophy. This stance is compounded by the country's employment laws, which strongly support the employees. Nevertheless, organisations in Germany face more difficult economic conditions and are taking an interest in exploring outsourcing options. A number of major U.S. outsourcing vendors are also actively targeting Germany. The concept of outsourcing is becoming widely publicised by these organisations and German vendors such as Debis Systemhaus. As a result, adoption of systems operations in Germany is forecast to grow substantially over the next five years.

Exhibit III-2 gives the comparative growth rates and market sizes of the network management outsourcing country markets in Europe .

EXHIBIT III-2

Network Management Country Markets Europe, 1992-1997				
Country	Market Forecast (\$ Millions)			
	1991	1992	1992-1997 CAGR (%)	1997
France	95	110	21	290
Germany	65	85	21	225
United Kingdom	85	115	26	360
Italy	28	35	26	100
Sweden	6	8	30	30
Denmark	2	3	27	8
Norway	2	3	27	10
Finland	4	4	26	15
Netherlands	6	12	22	32
Belgium	3	4	21	10
Spain	11	17	25	50
Switzerland	4	5	29	20
Austria	2	3	30	10
Portugal	1	1	27	2
Greece	-	1	28	2
Ireland	2	2	25	5
Eastern Europe	1	2	38	10
TOTAL (Rounded)	320	410	24	1,180

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Users Need to Reduce Costs and Improve Staff Skills

A

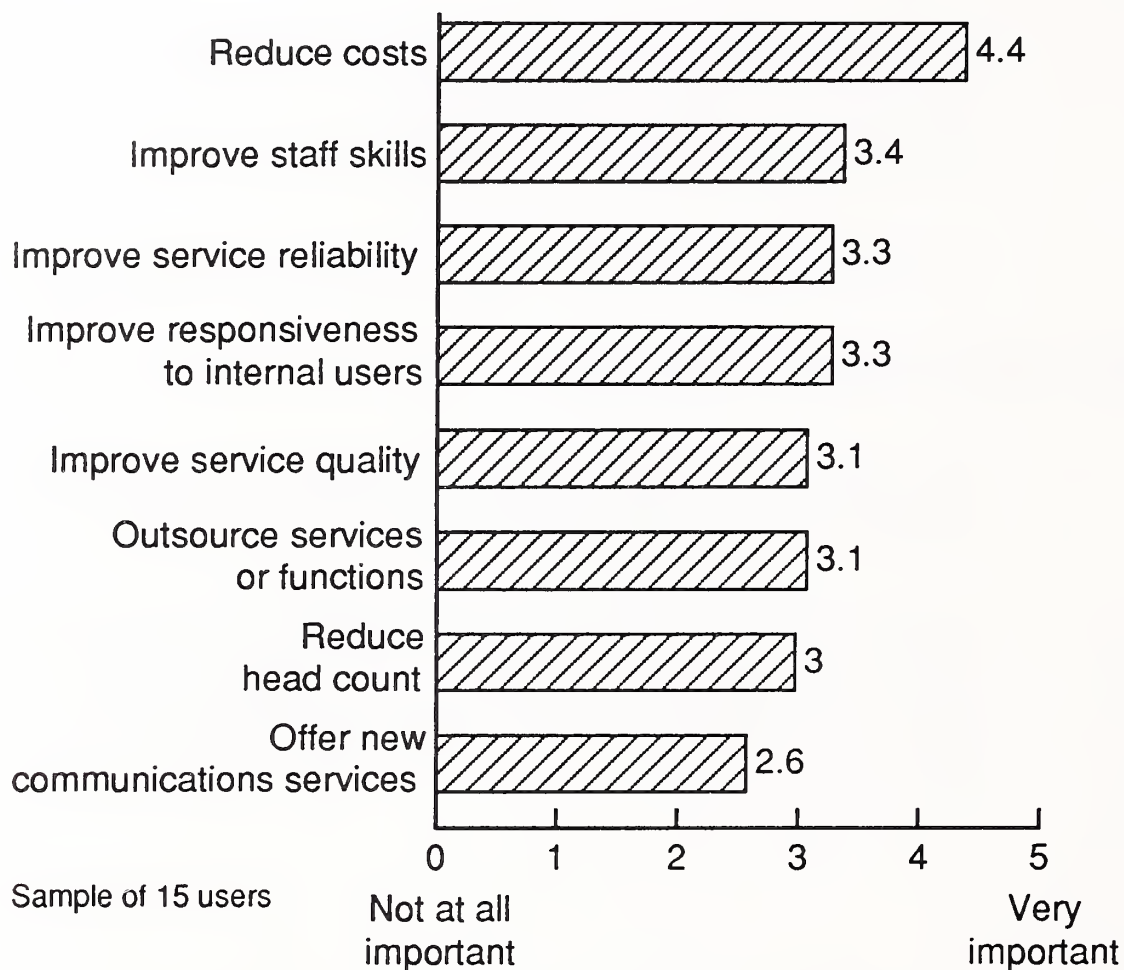
Cost Reduction of Overwhelming Importance

Throughout Europe it is common to find that senior executives want to reduce their information systems costs while improving their level of contribution to the organization's goals.

A similar situation exists in the networking arena. INPUT requested telecommunications managers within major European organizations to rate the importance of each of a number of potential changes to their data networks over the next few years. The results of this survey are listed in Exhibit IV-1.

EXHIBIT IV-1

Changes to Data Networks



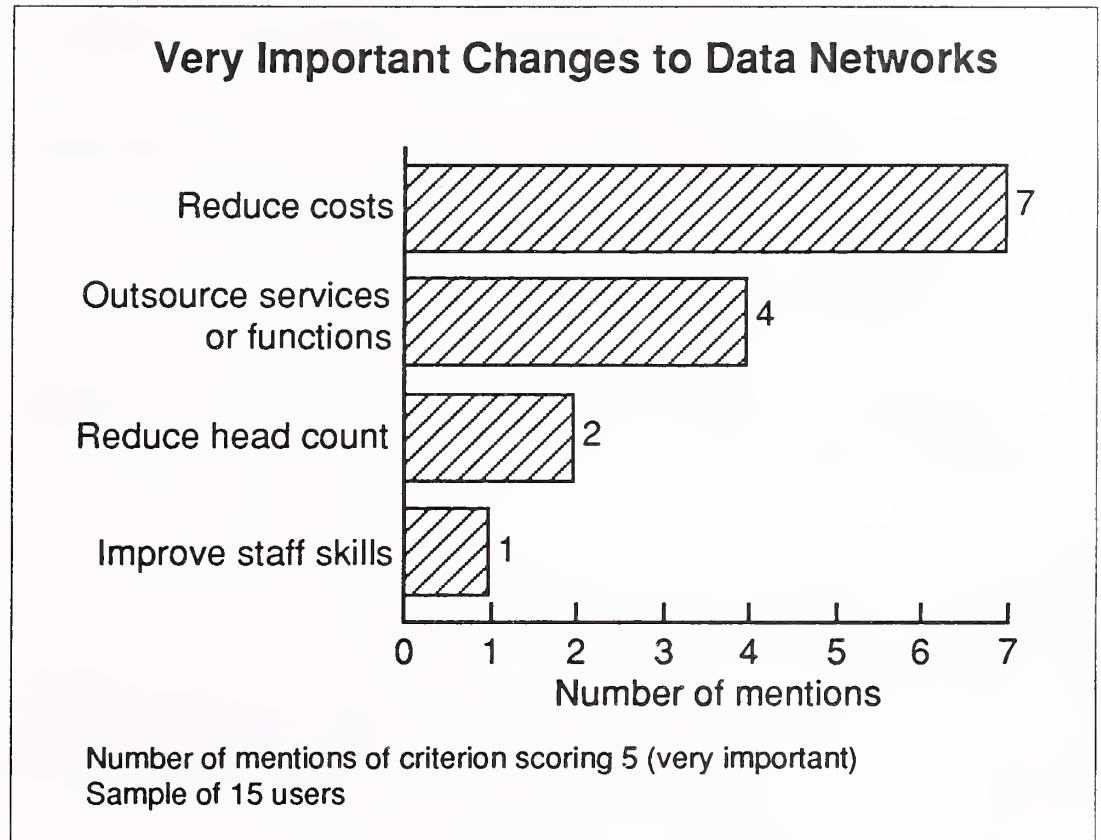
The need to reduce costs is the most important need expressed by these managers

The need for new types of communications service received only a low level of interest. The second priority of telecommunications managers was the need to consolidate existing services by:

- Improving responsiveness to internal users
- improving service reliability
- Improving staff skills

However, the average ratings shown in Exhibit IV-1 disguise the polarisation in the level of need expressed by respondents. Exhibit IV-2 identifies those changes that the sample of telecommunications managers regarded as "very important".

EXHIBIT IV-2



This again stresses the importance of cost reduction with nearly 50% of respondents citing the reduction of the running costs of their data networks as very important.

However, this analysis also shows that 25% of respondents felt that outsourcing their data network services or functions was “very important”. Many of the other respondents were opposed to outsourcing and regarded it as of very low importance. Overall, this indicates that a considerable proportion of telecommunications managers are considering outsourcing their data networks.

The major motivation to consider outsourcing is the possibility of achieving cost reduction. The principal means by which users expect to achieve cost reduction are listed below:

- Outsourcing
- Bandwidth sharing
- Downsizing
- Use of ISDN
- Centralized data management

Outsourcing, or the evaluation of outsourcing, is often initiated by a desire to consider means of cost reduction. Amongst the telecommunications managers surveyed, there was a very high correlation with the need to reduce costs.

However, other means of cost reduction are also available. Two further means mentioned by respondents are listed below:

- The optimisation of the existing network infrastructure, with the main theme being to reduce circuit rental through voice/data integration, voice compression, dynamic bandwidth allocation and investigation of ISDN.
- Downsizing of central computing resources

Centralized data management was also viewed as a way of reducing the number of personnel involved in network management, and hence reducing the network's running costs.

B

Increased Interconnectivity—A Key Requirement

The telecommunications managers interviewed were also asked to nominate the aspects of their networks in which they anticipated making improvements. The principal areas for improvement identified are listed in Exhibit IV-3.

EXHIBIT IV-3

Areas for Improvement	
Area	Importance
Interconnectivity	High
Cost reduction	High
Move to client/server	Medium
Improved reliability	Medium
Network extension	Medium

There is a strong need for increased interconnectivity. Many telecommunications managers are displeased with the large number of potential IS users who are unable to access key systems or applications. Users are clearly endeavouring to attain:

- Global interconnectivity of all their personnel

- Improved interconnectivity between differing types of systems such as mainframes and LANs

Client/Server architecture is beginning to play an important role in this process.

Greater levels of intra-organisational interconnectivity are planned through the interconnection of disparate LANs and more open, UNIX-based computing environments.

However, there remains the problem of achieving successful routing across heterogeneous IS environments, which often consist of a mixture of proprietary and open architectures that embody mainframes, mid-range equipment, LANs, and personal computers.

Faced with technical challenges of this magnitude, users are turning to vendors for assistance. In particular, users find that their major technical challenges are not their wide-area networks, but the considerable local-area networks that have emerged within their organizations.

As organizations become more transnational and compete on an European or worldwide basis, they are having to extend their network's geographic coverage. This can present its own difficulties. PTT competition in Europe and resultant restrictions on geographic cover make the issue problematic.

However, some users are endeavouring to outsource all their IS infrastructure management worldwide. One example is BP Exploration, which has assembled a consortium of vendors to handle the following areas worldwide:

- Platform operations services
- Desktop services
- Network management

Clearly, such a task presents a considerable challenge to any vendor because of the extensive geographic coverage required and the wide range of technical capabilities.

End users are also becoming more dependent upon access to the corporate network. Therefore, network reliability, resilience, and round-the-clock access are important considerations for telecommunications managers considering outsourcing the management and provision of their corporate networks.

A number of users also seek to cover their speech and data networking requirements from a single network.

Examples of outsourced network management contracts are provided in Exhibit IV-4.

EXHIBIT IV-4

Examples of Outsourced Network Management Contracts

User	Contract details
Unilever	Voice networking (BT) Transnational data communications (Sprint)
Microsoft	Data communications (BT)
Avis	Data transfer between offices (Mercury)
GEC	Voice and data (Mercury)

Unilever initially outsourced its networking to EDS. However, the company now uses BT for voice networking and Sprint for its transnational data communications. Unilever claims to have been motivated to outsource by a combination of the cost and complexity of in-house network management.

Microsoft recently handed over the management of its European network—both LAN and WAN—to BT. Microsoft uses 150 LANs to link 20,000 personal computers, nine Digital Vaxs and nine IBM AS/400s. The company was keen to adopt centralised network management.

In a classical outsourcing contract, GEC has outsourced its corporate communications network—both voice and data—to Mercury, having decided that it was not economical to run its own private networks. Mercury bought GEC's existing corporate network, transferring 35 personnel from GEC to Mercury.

Mercury has also won a three-year, \$3 million contract to manage the transfer of data between Avis' 100 U.K. offices.

Other contracts include Syncordia's deals with IBM Europe and Amadeus, and Transpac's success with the Ladbroke Group.

C

Geographic Coverage Needs to be Extended

Telecommunications managers were also asked by INPUT for the advice they would offer to vendors. Their suggestions are listed below:

- Provide wide geographic coverage
- Provide same quality services at lower costs
- Be flexible/unbundle pricing

Users have difficulty in managing the transnational network coverage required by their organizations. Also, because the major corporations need to increase rather than reduce the geographic coverage of their corporate networks, vendors need to offer matching levels of geographic coverage—outsourcing only for a single country will become inadequate.

However, given the inherent restrictions in Europe on extensive geographic coverage created by PTT controls, global services that fully meet user requirements are more of a desire than a realistic possibility in the short term. This is one of the major inhibitors in the growth of network management outsourcing in Europe.

As in all instances of outsourcing, vendors have two choices:

- To offer similar service levels at reduced cost
- To offer improved service levels at reduced cost

Though the right decision will vary from client to client, users appear to favour reduced cost for similar levels of service to that currently delivered by their in-house operations.

However, this does not imply low service levels. Many in-house network managers feel that they can provide a 24 hour per day service to their end users, seven days a week, and expect any network outsourcing vendor to offer similar levels of service availability.

Large users are especially concerned with the resilience of the network and achieving the maximum performance standards. For this reason, a great many managers are not prepared to trust their networks to outside vendors. The main requirement is proof of successful service involving a competitor's network or very close previous relations with the outsourcing company in which a high degree of trust and commitment have successfully been established. This is a crucial factor and could feasibly include unrelated network services. Yet, the ability to trust the supplier was the prime consideration.

Security is another major issue that is frequently raised and must be addressed by potential vendors. This covers two issues: network security in terms of backup in case of circuit failure, and security for the business in terms of confidentiality of information.

Flexibility, in terms of use and development of the network as well as its tariffs, is another key requirement. In a market that is gearing toward open rather than restricted proprietary vendor solutions, the same concerns apply when considering outsourcing of management functions. Tariffing is a particularly difficult issue given the requirement from users for set tariffs to enable realistic financial budgeting and a flexible arrangement that does not tie them into bundled services.

Some of the major reservations expressed by potential users of network outsourcing are listed below:

- Loss of control
- Loss of creative management
- Monopoly situation
- High costs
- Unclear vendor strategic direction

The main negative theme surrounding the issue of network outsourcing was the fear of loss of control on behalf of the organisation outsourcing the network. The main issue arising from this was the perceived inability to regain control over the network at a given point in time due to vendor inadequacy.

The major loss that would not easily be regained would be in terms of in-house technical expertise, which is becoming an increasingly crucial asset. Additionally, a lack of real interest on behalf of the service provider in the performance of the network would replace in-house creative management of the network's development and optimisation.

D

A Perspective from the United States

The market for outsourced network services is more developed in the U.S. than in Europe. This is largely due to the deregulation of the telecommunications market, creating a freedom of environment that is much more closely related to the U.K. than it is to the rest of Europe.

The majority of vendors attempting to approach and develop the European market for such services have specific plans to target the worldwide “Top 1,000” companies (according to *The Time* or *Fortune* listings). Therefore, a great many of these target companies are based in the U.S., or have nodes in the U.S. as part of the worldwide networks, making the target market of an international worldwide nature, rather than purely European or North American.

INPUT recently produced a U.S. report on the network management component of the outsourcing market entitled, *Outsourcing Network Management and Operations*. There are obviously a great many factors that are unique or specific to Europe; however, the results of the research give a perspective of user attitudes in the U.S. where companies have had much more experience with network outsourcing than in Europe.

INPUT estimates that the market for outsourced network management services for the U.S. in 1992 is worth approximately \$2.7 billion. The market is projected to grow at an estimated average rate per year of 20% to reach \$6.8 billion by 1997.

The main issues for users in the U.S. who have accelerated the growth of the market were:

- To increase the focus on core business activities
- To reduce the complexity of the network and network management tools
- The need to reduce telecommunications expenditures
- Needing to increase staff quality while reducing the high turnover of staff
- To increase the network availability and reliability

Overall, the users who employed outsourced network services were content with the services that they were receiving. As the results reveal, users in the U.S., partly through their own experiences, are a great deal more positive about and comfortable with the idea of outsourcing services than their counterparts in Europe.

The main conclusions of the research are listed below:

- Significant cost savings
- Increased network reliability and availability
- Satisfied users
- Systems integrators in best market position
- Increasing network outsourcing demand
- LANs and voice networks mostly in demand
- Majority of network outsourcing users also outsource platform operations

The expected annual saving in telecommunications expenses ranged from 5% to 25%, averaging 16% overall. Actual savings reported by users averaged 21%.

Network outsourcing increased control over network reliability and availability with reliable network services available 7 days a week, 24 hours a day.

All user outsourcing participants were either satisfied or highly satisfied with their network operations management vendor. These users reported that most of the benefits they anticipated were already being met or are in the process of being realised.

U.S. users perceive systems integrators to have the highest probability to meet network operations management requirements.

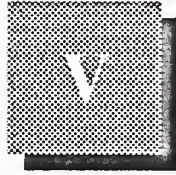
Trends in data centre downsizing, client/server LANs and interconnection of local- and wide-area networks will continue to increase the emphasis on the network and its outsourcing alternatives in the U.S.

Users ranked LANs and voice networks as their highest network requirements.

Over half of the users that responded were outsourcing their data centre operation in addition to network operations. The majority of these companies used the same vendor for both arrangements. To illustrate the state of development of the services on the U.S. market, users currently outsourcing their network functions were asked which of the benefits they had anticipated and which had not yet materialised. Exhibit IV-5 gives a summary of the responses.

EXHIBIT IV-5

Network Operations Management Benefits in the U.S.	
Benefits Realised	Benefits yet to be realised
Performance improvements	Multivendor management
Focus on principal business	More strategic asset use
Increased service levels	Integration of services
Cost savings/expense control	Total interoperability
Head count reduction	Use of enhanced services
Network design can transition to new technologies	No need to hire personnel with specialised skills
Higher network availability	Full-cost savings
Single-source accountability	New applications
Economies of scale	



Major Vendors Target Outsourced Network Management

A

AT&T Istel—Network Management is the Basis of Future Outsourcing Growth

AT&T Istel has aggressive growth targets. Overall, the company is targeting growth in software and services from \$275 million in 1991 to reach \$2.2 billion by 1996. By this time, AT&T Istel plans to be one of the top three software and services vendors in Europe alongside EDS and Cap Gemini Sogeti.

Similarly, the company is aiming to be one of the top three European outsourcing companies by 1996, with its revenue increasing at 45% per annum from \$80 million in 1991 to reach \$500 million by 1996. Obviously, this level of growth can be achieved by an aggressive acquisition policy.

AT&T Istel claims to have the necessary financial backing from its parent to achieve these goals, and evidence of this is seen in the company's recent acquisition of Dataid for \$95 million. A significant number of further acquisitions can be expected to follow as AT&T Istel concentrates on building a pan-European software and services capability with a strong outsourcing component.

1. Developing Change and Network Management Offerings

AT&T Istel envisages a major change in the profile of its outsourcing contracts over the next five years, with increased emphasis on change management and network management.

The company recognises that many multinational companies are intending to downsize and believes that this offers a major opportunity for AT&T Istel to change management services. Whereas much change management activity to date in Europe has involved the outsourcing vendor in managing the "old" systems while the user develops the new systems, AT&T Istel believes that such transitions present an opportunity for vendors to become involved in the redevelopment of systems to run on open systems.

AT&T Istel also has a major strength in networking and expects to become involved in network management, utilising its fast developing pan-European networking capability.

Under the main brand name of ACCUMASTER, they provide the following services:

- Global network design and planning
- Global network management training
- Network management operations analysis
- Country to country service

Within Europe there are three main services:

- AT&T ACCUNET Spectrum of Digital Services
- AT&T ACCUNET Packet Service
- AT&T Interspan Frame Relay

Local, metropolitan, and wide-area networks are supported internationally as are voice networks. Integrated with the services are hardware maintenance and network design, configuration and problem management, capacity management and administration.

AT&T Istel believes that it is at the forefront of Frame Relay technology, which will deliver the advantages of private lines and packet switching. This uses cellular asynchronous transfer mode, enabling voice and image to be transmitted. Improvements in ISDN are also impacting the market significantly.

Network operations management contract services are expected to change over the coming five years due to a move for a more distributed architecture in organisations and a range of related business and technology issues, namely:

- The need for greater control
- The linking of local-area networks to be more effective over wide-area networks
- The use of corporate databases that need to be accessed and updated
- The requirement for a greater bandwidth for certain applications like medical documents image processing
- The need to flex to have either packet switching or occasional dedicated use

AT&T Istel's services are managed through its Global Network Management Centres in Redditch, New York, Amsterdam (being constructed) and Singapore (planned).

AT&T Istel anticipates high growth rates in the outsourcing of network management driven by:

- Technical developments, particularly with respect to distributed processing
- Growth in applications, for example, CAD/CAM, EDI
- Customers increasing desire to regard the technology as an enabling tool. This becomes important when operating in a multivendor environment.

The company sees users of outsourced network management falling into two groups:

- Medium-sized companies wishing to outsource an expensive and technically complex activity.
- Large-scale manufacturing organisations working as global factories and having needs for extensive international networks.

The principal reasons for adoption of outsourcing are:

- The desire to reduce costs below those incurred by maintaining in-house technical specialists
- Lack of knowledge or experience in dealing with a range of PTTs

AT&T Istel's main contracts are in the automotive, process, aerospace and electronic industries. They include:

- Rover cars
- Massey Ferguson
- National Health Services
- SKF & Dormer Tools
- Barclays Merchant Services
- RAF Hospitals
- West Midlands Regional Health Authority
- J P Morgan.

Whereas the company's contracts are almost exclusively based on data communications at present, image and voice communications are expected to grow in importance in the future.

B

BT—Established Communications Outsourcing Group

BT enjoyed a monopoly for a long time, followed by a comfortable period of duopoly with Mercury from 1981, which has recently ceased. With increased competition and calls by consumers, competitors and Oftel to improve its performance and to release its stranglehold on U.K. telecommunications, BT is under pressure to provide a truly competitive and value-added service.

One of the many commercial activities established is the communications facilities management activity, which provides managed network services for commercial clients. Formed two years ago, it has now focused its sales activities to corporate clients through the account directors and account managers within industry sectors. Each sales team under the account director also includes systems engineers and support staff. The account director is responsible for marshalling all resources and delivery of all BT services to a client and is most often responsible for a number of accounts.

The main services provided under the umbrella of CFM (communications facilities management) managed network services are as follows:

- FeatureNet 1000 Virtual Private Network
- FeatureNet 5000 providing a centrex PBX style service on a virtual private network, i.e., clients can call internal extensions as if it was on their own network.
- Global Network Services meaning global packet switching
- Flexible Bandwidth Services (maximum 2 megabytes) in which the client can have variable amounts of bandwidth available for data transmission by time of day or on demand.
- PRIMEX, the international management of private circuits
- BT Syncordia, based in Atlanta, Georgia, providing facilities management for worldwide customers.

Thus, all types of networks are supported including voice, LANs, WANs, intersite and international data networks together with cellular and satellite links.

The main technology impacting the business is service management technology, providing better control and “intelligence” in the system, particularly through remote diagnostics.

BT wants to layer its range of services from a relatively minor role of outsourced maintenance through increasing levels of supply to include the billing of its clients' customers for communications services. It envisages an increasing degree of involvement between BT and its clients with greater trust and commitment. Outsourcing is set to increase and be fueled by the complexity of telecommunications technology. BT expects the market to grow at approximately 20% per year because of the rate of change in complexity. Another positive trend can be financial pressure on organizations.

The turnover from CFM is greater than \$25 Million through the continued focus on the provision of a bespoke service for each individual client. There is a wide variation across the contracts in terms of value (from \$400K to several million) and duration, which may be from 3 to 5 years.

The present and forecast breakdowns of BT's managed network services revenues are shown in Exhibit V-1.

EXHIBIT V-1

Breakdown of Managed Network Services Revenues

Service Type	Proportion (%)	
	1991	1997
Voice Communications	60	50
Data Communications	35	35
Image & Video Communications	5	15
Total	100	100

Currently, gaining over \$25 Million in revenues, BT believes that the companies most in need of network management services are those that have already made a significant investment in communications in the form of a large communications department. In addition, companies in a state of great change in their operations are also good prospects because they tend to be more open to the idea of outsourcing non-core business activities.

The main reasons for outsourcing include the obvious drive for cost saving in a recession and to gain access to communications skills that are either difficult or expensive to keep up. The costs of personnel and their continuous education are seen as prime drivers. The decision to outsource is typically made at director level and decisions take 6-12 months. Claims for savings vary, but in BT's view, the savings really depend on the efficiency with which the telecommunications activity is run before outsourcing—if the activity is efficiently run then the savings will be low—if the activity is inefficiently run then the savings may be as great as 15-20%. In any event, there is usually a year on year savings to be gained through the professional management of network management services.

BT actively markets to the following sectors:

- Finance and retail
- Government (including central, local and health)
- Industry.

Current clients include:

- Complete management of network and communications services for a major multinational conglomerate
- Small contract for inventory performance reporting (sophisticated level of call logging and additional services) for a major corporation
- Complete contract for small successful company

C

Digital

When Digital first entered the outsourcing market in Europe in autumn 1989, the company's motivation was primarily to support customer demand. This reactive stance has been replaced by a proactive one. Digital wants to develop its outsourcing market share in Europe (particularly in the national markets where outsourcing is most readily accepted such as the U.K., France, the Netherlands, and Sweden).

Digital UK accounts for a major part of Digital's European outsourcing revenues, and the organisation's current outsourcing revenues are estimated in Exhibit V-2.

EXHIBIT V-2

Digital UK, Outsourcing Revenues

Service Category	Annual Revenues (£m)
Systems Operations	7
Network Management	6
Desktop Services	5
Total	18

One of Digital's strengths is its networking capability and network management accounts for one-third of Digital UK's outsourcing revenues. Digital also wants to develop its presence in the outsourced desktop services market.

Digital has a strong network management capability and many of its platform operations contracts involve a network management component. Digital uses its own network to provide network management services and to link clients to its data centres. In the U.K., Digital has two data centres: the principal one in Newbury and another in Bristol. Business protection services—disaster recovery—are provided from a satellite centre in London.

Digital provides a range of network services to suit the customer with a high level of expertise and the customer who wishes to divest himself totally of the network management and its operation. From providing basic products and tools, Digital's involvement can increase to include consultancy services, operations services, managed transmission and messaging services.

Digital's main network services are as follows:

- Products and tools
- Network consultancy services including:
 - Network strategic planning and design
 - Network management planning
 - Network performance consultancy
 - OSI transition planning
 - Message Handling System (MHS) planning and design
 - MHS Node implementation

- Network management operational services delivering multivendor network management
- Managed transmission services to assist the construction or outsourcing of a transmission network
- Managed messaging services providing a bespoke messaging service for a client

All types of networks are supported including voice, LANs, WANs, intersite and international data networks together with cellular and satellite links through over 100,000 nodes.

As bandwidth problems are overcome, there will be an integration of voice, image and data leading to high growth rates in the market for outsourced network management.

Digital's main clients are in the distribution, manufacturing, financial services and retail sectors and include:

- W.H. Smith for newspaper distribution for 460 sites, two processing centres and 40 warehouses. The project included staff transfer, purchase of old facilities, migration and integration. Digital now provides a total-managed-network service. A fixed price per connection point makes annual budgeting and expansion planning easier and more reliable.
- PepsiCo
- Quotron - a financial services organisation with eight network sites worldwide. They concentrate on their core business, and require one-stop network shopping with a single point of contact and flexibility to grow without major capital investment. Digital supplies a fully functional global solution with service level guarantees and controlled growth within budget.
- Alders - a successful chain of retail department stores. The outsourcing of the Newbury data centre was continued with the provision of a network to provide all the stores information with a controlled cost and performance.

Digital has a number of contracts to provide systems operations management and network management features as an integral part.

The main reasons for outsourcing is the wish to make cost savings, or at least control costs, and gain access to technical expertise not resident in the company. More frequently, organisations are concentrating on their core businesses and wishing to divest themselves of running an expensive non-core technical area.

Access to up-to-date technical knowledge is another important factor.

D

IBM

Though IBM has been active in the French outsourcing market through its Axone joint venture with Sema Group for a number of years, it was at the beginning of 1992 that IBM explicitly entered the outsourcing market in the United Kingdom. However, this has not prevented IBM from winning six outsourcing contracts in the U.K. prior to the end of September. Nor has it prevented IBM from setting ambitious targets. IBM aims to be the market leader in terms of annual contracted business won that year by 1995 or 1996. The annual revenues of the 1995 outsourcing market in the United Kingdom is forecast to be £1 billion, with total new contracted business worth £1.5 billion available that year. To position itself as market leader, IBM is likely to be targeting new business with a total contracted value in excess of £200 million that year.

In the first nine months of 1992, IBM is estimated to have won contracts valued at £40 million over their total contract period (see Exhibit V-3).

EXHIBIT V-3

IBM Outsourcing Contracts

Client	Type of Service	Value (£M)
Equifax	Platform operations	20.0
Iron Trades Assurance	Platform operations	2.0*
Winchester Health Authority	Platform operations	1.3
Wirral Hospital Trust	Platform operations	
U.K. Police	Applications operations	10.0*
Next	Platform operations	10.0

*INPUT estimate

Source: INPUT

IBM is well placed to become one of the market leaders in platform operations and network management—areas where the company has cost and technological advantages over many of its rivals.

Since 1990, IBM has responded to customer requirements for outsourcing in the U.K. However, the company has now announced the seriousness of its intent by setting up a wholly owned subsidiary in the United Kingdom, IBM Information Solutions Limited (ISL). ISL employs 1,600 personnel consisting of IBM's in-house IS staff. The majority of these staff still concentrate on providing services to the parent company.

IBM expects its presence in the marketplace to grow through continued co-operation between its Managed Network Services (MNS) organisation and ISL, through the increase in systems operations outsourcing, primarily run from Warwick and Portsmouth.

There is only the main service within MNS and that is Managed Network Service itself. There is a shared infrastructure based on 40* 37XX, 40 * IDNX and four 3090 communications processors for the U.K. There are approximately 10 times this amount of hardware running the network for Europe.

Within the MNS service, IBM provides wide-area networks, intersite data networks and international data networks. Regulation has prevented the provision of voice networks until recently and IBM is not currently offering any voice network service. All the standard functions including hardware maintenance and network design, configuration, problem and capacity/traffic management are included with network administration and help desk service.

IBM sees the main change agent as the technology of cable: the increase in use of cable TV and the ability to convert or add to such links, cable telephone. There will be increasing emphasis on service level agreements, terminal to terminal service and international communications, including the provision of the processor and local-area networks.

IBM's main clients include:

- V.A.G. (Volkswagen Audi Golf) for the provision of the systems operations and the network
- Laing Construction
- British Steel Corporation for the delivery of a network to serve the BSC customers
- UDT (United Dominions Trust) for the network to enable provision of its loans and other financial services through the branch offices

IBM believes that the most common users include banks and financial organisations or those with 'new' communities, for example, large companies with a significant user population or retail network. The benefits of network outsourcing apply to large and small companies and though from IBM's point of view the bigger ones are better prospects, the need of the smaller companies is at least as great.

The main reason for outsourcing network management is the change from old to new technology and the problems experienced by in-house communications staff in keeping up to date. This and the current 'social norm' for organisations to concentrate on their core businesses are leading to a greater interest in outsourcing. Typically, the decision to outsource will be made at a financial director or CEO level in the company and will take approximately 6 months to sign a contract.

E

Mercury—Aiming at Major Corporations

Mercury Communications was established in 1981 to provide a national telecommunications service in the U.K. in competition with British Telecom, until then a monopoly carrier. Awarded a licence in 1982, Mercury was Europe's first competitive national carrier. In the year ending 31st March 1992, Mercury earned a profit of £155 million on a turnover of £915 Million. Since 1984, Mercury has been wholly owned by Cable & Wireless. The duopoly has now ended and further competition will arise in line with government encouragement.

Mercury Data Network Services (MDNS) was formed in 1987 when Mercury acquired the networking business of ICL. In 1989, Mercury announced an £8 million investment programme in the network including a new core network-based on Northern Telecom DPN 100 packet switches. By the end of 1992, there will be some 80 nodes and dial-up access will be available to 90% of the U.K. business population. MDNS is free to obtain capacity for its network from either its parent Mercury or BT.

The Managed Data Network services comprise:

- Mercury 5000, a national X25 network
- Mercury 5000 international, providing a gateway to packet switched networks in over 80 countries
- Mercury 5000 CDN (Corporate Data Network) launched in January 1990 and providing support for corporate networks based on Mercury 5000, up to full facilities management

- Mercury TFMS (Telecommunications Facilities Management Service) providing outsourcing services for private networks internationally as well as in the U.K.

Mercury can provide a gateway to all types of networks. Mercury also provides service in terms of the functions carried out as part of a contract from hardware supply and maintenance, network design, configuration, problem and capacity management to network administration.

The main reasons for outsourcing include the drive for cost saving and to gain access to communications skills that are either difficult or expensive to maintain. The costs of personnel and their continuous education are seen as prime drivers.

The major thrust for the Data Network Services business is recruiting major corporate customers for the CDN (Corporate Data Network) and TFMS (Telecommunications Facilities Management Service) services. There is a strong trend towards outsourcing particularly in retail and finance sectors. Mercury competes with BT GNS, Transpac, AT&T Istel, Midland Bank and Sprint. Eighty to ninety percent of the revenue to MDNS is earned from major corporate customers, and this is estimated to be ECU45 million in 1991.

The rapid change in technology is a continuing difficulty and high cost for an organisation whose main business is not communications. This and the increased acceptance of outsourcing many non-core business activities from catering to security and deliveries mean that more organisations will seek cost-effective solutions from external suppliers.

Typical contracts include:

- INS - the EDI (electronic data interchange) services provider. INS uses Mercury to connect some 2,500 customers to its EDI service. Mercury 5000 encompasses some 5,500 connections, 2,200 of them via PSTN (Public Switched Telephone Network).
- Avis - Mercury's first totally managed data communications for Mercury 5000 CDN was signed with Avis in March 1992. It is expected that 116 Avis car rental locations will be served by March 1993.
- GEC - In April 1992, an outsourcing contract worth £50 million was signed with GEC for a five-year period of voice and data communications services.

To succeed in the future, Mercury will compete on innovation, service, and functionality as well as price.

